

Food extrusion

Food extrusion is a form of extrusion used in food processing. It is a process by which a set of mixed ingredients are forced through an opening in a perforated plate or die with a design specific to the food, and is then cut to a specified size by blades.

Extrusion enables mass production of food via a continuous, efficient system that ensures uniformity of the final product. Food products manufactured using extrusion usually have a high starch content. These include some pasta, breads (croutons, bread sticks, and flat breads), many breakfast cereals and ready-to-eat snacks, confectionery, pre-made cookie dough, some baby foods, full-fat soy, textured vegetable protein, some beverages, and dry and semi-moist pet foods.

- Destruction of certain naturally occurring toxins
- Reduction of microorganisms in the final product
- Slight increase of iron-bioavailability
- Creation of insulin-desensitizing starches (a potential risk-factor for developing diabetes)^{[7][8]}
- Loss of lysine, an essential amino acid necessary for developmental growth and nitrogen management
- Simplification of complex starches, increasing rates of tooth decay
- Increase of glycemic index of the processed food, as the "extrusion process significantly increased the availability of carbohydrates for digestion"^[10]
- Destruction of Vitamin A (beta-carotene)
- Denaturation of proteins.



Macaroni is an extruded hollow pasta

Denaturation is a process in which proteins or nucleic acids lose the quaternary structure, tertiary structure and secondary structure which is present in their native state, by application of some external stress or compound such as a strong acid or base, a concentrated inorganic salt, an organic solvent (e.g., alcohol or chloroform), radiation or heat.[!]

Most biological substrates lose their biological function when denatured. For example, enzymes lose their activity, because the substrates can no longer bind to the active site, and because amino acid residues involved in stabilizing substrates' transition states are no longer positioned to be able to do so.

- From Wikipedia, the free encyclopedia